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MEMORABILIA BOTANICA, I.

(Edited by Erwin F. Smith, B.S., D.S., Washington, D.C.)

CABINET WOODS AT THE FAIR.

ONE of the most interesting forestry exhibits at the Columbian Exposition was from New South Wales. The variety of their hard woods and the polish many of them take was a surprise to Americans. The only exhibit approaching it in beauty was that from Michigan. The woods of New South Wales must certainly come into extensive use at no very distant day. For novelties in cabinet ware nothing could be more attractive, and it would seem that such treasures need only to be exploited to find their way everywhere among lovers of the beautiful. In looking over this collection from the antipodes one could not repress a burst of thankfulness at finding it properly labeled. The exhibits from a number of countries, Spanish ones in particular, were robbed of much of their interest by indifferent labeling. To look over a large number of woods, all polished at great expense and some of them exceedingly beautiful, only to find Spanish or Indian names, was, from a scientific standpoint, rather discouraging, to say the least. In many cases one could not learn even the natural family, much less the genus and species. The matter is the more to be regretted since such opportunities for study come but rarely.

THE UNCERTAINTIES OF COMMON NAMES.

THE necessity for the more general use of scientific names in books of travel, economic works and various writings of a semi-scientific character, could not be impressed more forcibly than by this same forestry exhibit of New South Wales. For an American, especially if he desires to reach the common people, it is the most natural thing in the world to think everybody will know what he means by such names as white pine or red cedar. These names are not likely to be misunderstood in the United States, but if an author's writings are to be permanently useful to science the whole world over, then he must use the common language of science. To illustrate, New South Wales has an exceedingly varied flora, but not many of its genera, and very few, indeed, of its species, grow in the United States, and yet many of their common names are identical with our own. Plants of the United States and New South Wales, of very diverse genera, bear the same common name, e.g., according as one is American or Australian, elm means *Ulmus* or *Aphanathe*; tulip tree, *Liriodendron* or *Anopterus*; apple tree, *Pyrus malus* or *Angophora intermedia*; honeysuckle, *Lonicera* or *Banksia*; sycamore, *Platanus occidentalis* or *Cryptocorya obovata*; hazle, *Corylus* or *Pomaderris*; dogwood, *Cornus* or *Myoporum*; ironwood, *Ostrya* or *Tarrietia*; white cedar, *Cupressus* or *Melia*; mountain ash, *Pyrus americana* or *Eucalyptus virgata*; white pine, *Pinus strobus* or *Frenela robusta*; sassafras, *Sassafras* or *Doryphora*; red cedar, *Juniperus virginiana* or *Cedrela australis*; beech, *Fagus* or *Gemelina*; hickory, *Carya* or *Acacia*; swamp oak, *Quercus* or *Casurina*; box, *Buxus* or *Eucalyptus*; black oak, *Quercus* or *Casurina*; red ash, *Fraxinus pubescens* or *Alphitonia excelsa*; black ash, *F. sambucifolia* or *Cupania semiglauc*. Now suppose an economic writer of New South Wales to deal only in common names, and then imagine the confusion of an American reader, or reverse the case and imagine the perplexity of the Australian, if the diverse usage of the two countries were not known. The absurdity is apparent, and also the need of greater exactness in specifying what is meant by a common name. When the common name is in a foreign language the difficulty of arriving at the author's meaning is still greater, as everybody knows who has been compelled to depend on the imperfect and not seldom contradictory statements of lexicographers.

THE COFFEE DISEASE OF CEYLON.

PERSONS interested in coffee may have noticed in the Ceylon building at the Fair a big chart showing an astonishing decrease in the coffee product of that island during recent years. Formerly Ceylon was one of the great coffee producing regions of the globe, but within a decade the exports have fallen off so much that now the island scarcely cuts any figure in the total product of the world. Probably very few readers of *Science* know the cause of this. It has not been due to adverse legislation or to over-production in other localities, but almost solely to the ravages of a rust fungus, *Hemileia vastatrix*, which has destroyed the foliage on the coffee plantations in whole districts year after year. The losses have been so sweeping and disastrous as to bankrupt individuals, discourage planting and practically ruin a great industry. Dr. Haberlandt states that many of the large and beautiful coffee plantations can be bought to-day for one-tenth of their former value, the decrease of property values on account of this disease being estimated at about 10,000,000 pounds sterling. Recently it has been reported that the disease can be prevented by the use of copper fungicides. Owing, however, to the close planting of the groves, young trees under old and all interlacing, it is said to be impossible to spray with machinery and that the use of knapsack sprayers is too slow and expensive to be practical. The disease also occurs in Java, but lovers of the berry will be glad to know that it has not been reported from Mexico or Brazil.

BOTANY IN SECONDARY SCHOOLS.

FOR a long time the botanists of the country have recognized the sad state of botanical teaching in most of our high schools and smaller colleges. Chemistry and physics are taught experimentally, i.e., by laboratory methods, in all except a few hopelessly antiquated and fossilized schools, but botany is still taught quite generally by the old text-book-parrot method. Teachers do not seem to know that there is any better way, or that reciting lessons from a book is one thing, and the study of nature quite another. Indeed, the public mind itself, quite generally, needs to be disabused of the idea that science can be learned out of books. Books, when well written, are useful stimuli and valuable repositories of facts, but a man may study the printed page until he is gray without getting in touch with nature or acquiring the scientific spirit. Living, fruitful knowledge can come only from grappling directly with the phenomena of nature. This is why it is possible for students to take a three months' or six months' course in botany, so-called, and still have no interest in plant life, bringing away from their study nothing better than a meagre portfolio of incorrectly determined snips (there were some of these on exhibition at the Fair), a hopeless muddle of technical terms, and the lifelong feeling that botany is a very dry and uninteresting subject. On the whole, no instruction at all is preferable to such teaching. Those who have realized the badness of this sort of teaching have done what they could individually to improve it, but without any great measure of success. Now it is proposed to see if an organized effort will not be more fruitful. The subject came up for discussion in Section G (Botany) at the Madison meeting of the American Association for the Advancement of Science, and a committee was appointed to devise ways of improving botanical teaching in secondary schools. This committee will report to the Section next year, and if their report is approved it is hoped that it can go before the country with the endorsement and influence of the whole Association. Teachers who are groping about for

better methods, those who have already found good ways, and all who are interested in botanical progress in the United States will do well to correspond with the members of this committee,—Douglass H. Campbell, Palo Alto, California; N. L. Britton, New York, and Jno. M. Coulter, Lake Forest, Ill.

EMBRYOPHYTA ZOIDIOGAMA.

A RECENT double number of *Die Natürlichen Pflanzenfamilien* begins consideration of the higher cryptogams, the Embryophyta zoidiogama or Archegoniatae. This grand division of the vegetable kingdom is defined as follows:

"Plants seldom thalloidal, mostly differentiated into stem and leaves (cormophytic), and having two distinct generations. The proembryonal or sexual generation bearing antheridia in which spermatozoa are developed and Archegonia enclosing the egg cell, which is to be fecundated, and the canal cells, which change into slime prior to the act of fecundation. After fecundation the non-sexual embryonal generation or embryo arises by division of the egg cell and further growth, remaining a long time in connection with the proembryonal generation and being nourished by it."

The following subordinate groups are recognized, and the progress of systematic botany during the last forty years cannot be better understood at a glance than by comparing this system of classification with that given in Lindley's "Vegetable Kingdom."

(1) SUBDIVISION. BRYOPHYTA (MUSCINEI).

1. Class Hepaticae (Liver mosses).
 1. Sub Class Marchantiales.
 2. Sub Class Jungermaniales.
2. Class Musci (Musci frondosa, or Leafy mosses).
 1. Sub Class Sphagnales.
 2. Sub Class Andreaeales.
 3. Sub Class Archidiales.
 4. Sub Class Bryales.

(2) SUBDIVISION PTERIDOPHYTA.

1. Class Filicales.
 1. Sub Class Filices. Genuine ferns (Isosporae).
 2. Sub Class Hydropterides (Two sorts of spores).
2. Class Equisetales.
 1. Sub Class Isosporae.
 2. Sub Class Heterosporae.
3. Class Sphenophyllales.
4. Class Lycopodiales.
 1. Sub Class Isosporae.
 2. Sub Class Heterosporae.

This double number (91 and 92) brings Division 3 of Part I down to page 93, and deals with the following groups of liverworts: *Ricciaceae*, *Marchantiaceae*, *Jungermaniaceae anakrogynae*, and *J. akrogynae*. All by v. Schiffner, with many illustrations.

SOUTH KENSINGTON.

THE Kew Gardens are well known in the United States as the centre of an enormous amount of a conservative kind of botanical energy, mostly floristic, but it is not so generally known that Kew has a formidable rival at South Kensington. Indeed, in many ways, according to all accounts, and notably in the facilities offered to visiting botanists, and in the extent of its library, it is far ahead of Kew. The botanical library at South Kensington is now one of the best in the world, nearly \$100,000 having been spent on it within the last decade, and the collections are also valuable. The director, Mr. Carruthers, wishes it understood that South Kensington is in full sympathy with the new botany and that specialists from every quarter of the globe are welcome and will be given every possible facility, in the way of books and collections, for the pursuit of original investigation, whether of phænogams or cryptogams.

CURRENT NOTES ON ANTHROPOLOGY.—

NO. XXXIX.

(Edited by D. G. Brinton, M. D., LL. D., D. Sc.)

INSCRIPTIONS ON FRENCH MEGALITHIC MONUMENTS.

THE megalithic monuments of France are divided into great upright stones, *menhir*, groups of these, *gromlech*, and large flat stones superposed on others which are upright, *dolmen*. There are about thirty-five hundred of the latter in France, and still more of the former varieties. They used to be attributed to the Celtic Druids, but later writers hesitate to accept this identification. Some of them have figures inscribed upon them, not generally of men or animals, but apparently of a symbolic or even alphabetic character.

During the year 1893 two suggestive articles on these "alphabetiform" and other inscriptions appeared in the *Bulletins de la Société d'Anthropologie* of Paris, the first by Ch. Letourneau, the other by A. de Mortillet. In comparing the characters on the dolmen "des Marchands," in Brittany, with similar remains elsewhere, M. Letourneau made the interesting discovery that many of them were identical or very similar to those found in what are called the "rupestrian inscriptions" of Tunisia and southern Algeria. These are of Libyan origin, and by most recent scholars are held to preserve a form of writing older than the Punic alphabet, and akin to that which is seen on ancient Numidian mortuary tablets. This discovery is the more important, because the megalithic monuments can be traced from Brittany into northern Africa in an almost continuous line, indicating that those who constructed them followed this path, either in one direction or the other.

The figures reported upon by M. de Mortillet are from a series of these monuments in the vicinity of Paris. They do not present the "alphabetiform" appearance, but are crude representations of human beings, "in which the principal aim of the artist was to indicate the sex."

RELATION OF THE GLACIAL AGE TO MAN.

THE great event of the glacial period, or Ice Age, bears an important relation to the calculations of the appearance of man on earth. The most recent studies in post-pliocene geology are, however, far from unanimous on glacial questions, and this has reacted forcibly on writers about the origin of man. One who is generally very careful, the Marquis de Nadaillac, has actually been led in a recent article, of great merit, entitled "Les Dates Préhistoriques," to the extreme conclusion that "the remotest epoch to which we can assign the appearance of humanity on the globe can scarcely exceed 10,000 years."

He bases this conclusion largely on the writings of American geologists, as Warren Upham, Gilbert and Winchell, who from their observations of the gorge of Niagara, and other so-called "geologic chronometers," have reduced the period since the final departure of the great ice mass to six or seven thousand years.

Both these conclusions have very much the air of a *reductio ad absurdum*. They are in conflict with so many known facts and high probabilities in other directions that they disprove themselves, and indicate some radical error of theory. A much more plausible theory, which accounts for the "chronometers," and does not violate probability, is that which is advanced by Mr. F. B. Taylor, of a prolonged subsidence posterior to the ice age, the proof of which is in a continuous coast line from the Atlantic to Duluth. He is preparing to present the full evidence for this.